

## **Spectral Transformation of Ultrashort Pulses in Photonic-Crystal Fibers**

**Final Technical Report**  
**by**

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### **APPENDIX**

This appendix presents images of photonic-crystal fibers created under this project and photographs illustrating the performance of these fibers as supercontinuum generators and frequency shifters

#### **Figure list**

Fig. 1. SEM images of photonic-crystal fibers: (a-c) solid-core high-index-step silica PCFs with a few-airhole-ring cladding, (d) solid-core silica PCF with a dual microstructure cladding, (e) YAG-doped PCF, (f-h) soft-glass PCFs with a 1-mm core (f) and nanohole-array-modified core (g, h), (i, j) hollow-core PCFs with a low (i) and high (j) air-filling fraction of the cladding, (k) large-core-area hollow PCF, and (l) elliptical-core hollow PCF.

Fig. 2. Spectral transformations of ultrashort pulses in photonic-crystal fibers: (a) supercontinuum generation, (b) third-harmonic generation, and (c) frequency shifting.



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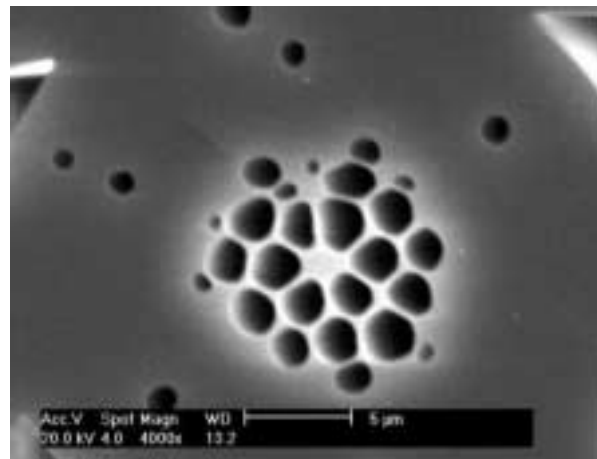


Fig. 1(a)

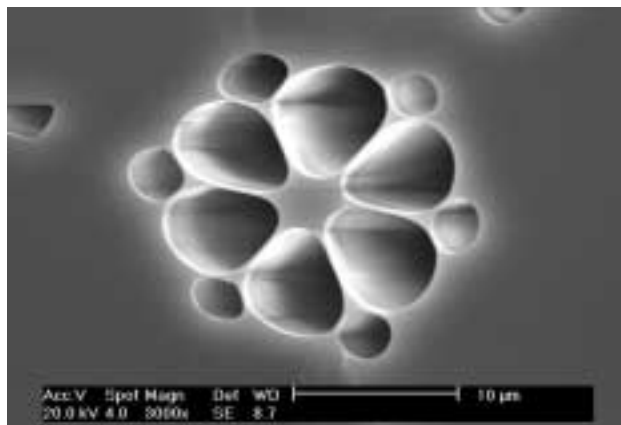


Fig. 1 (b)



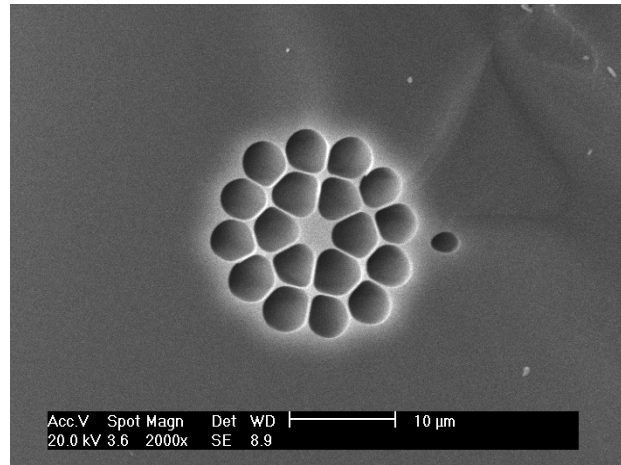


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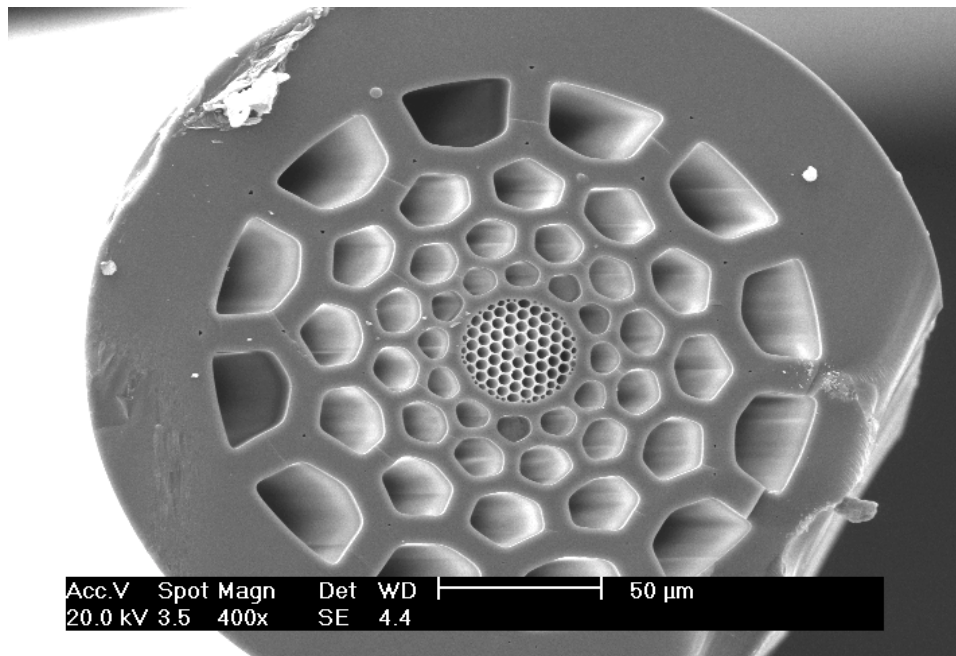


Fig. 1 (d)



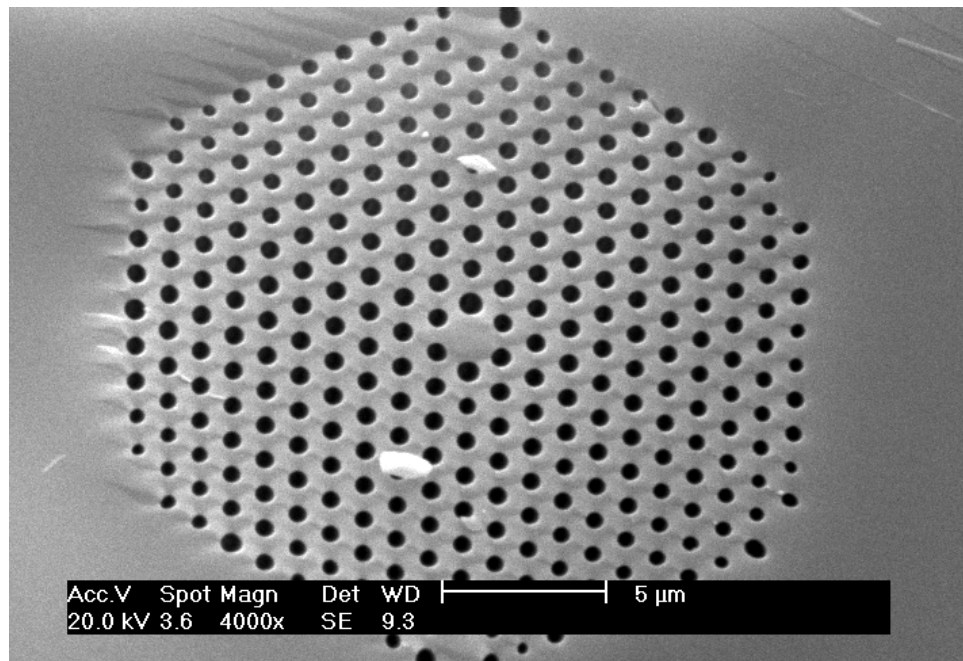


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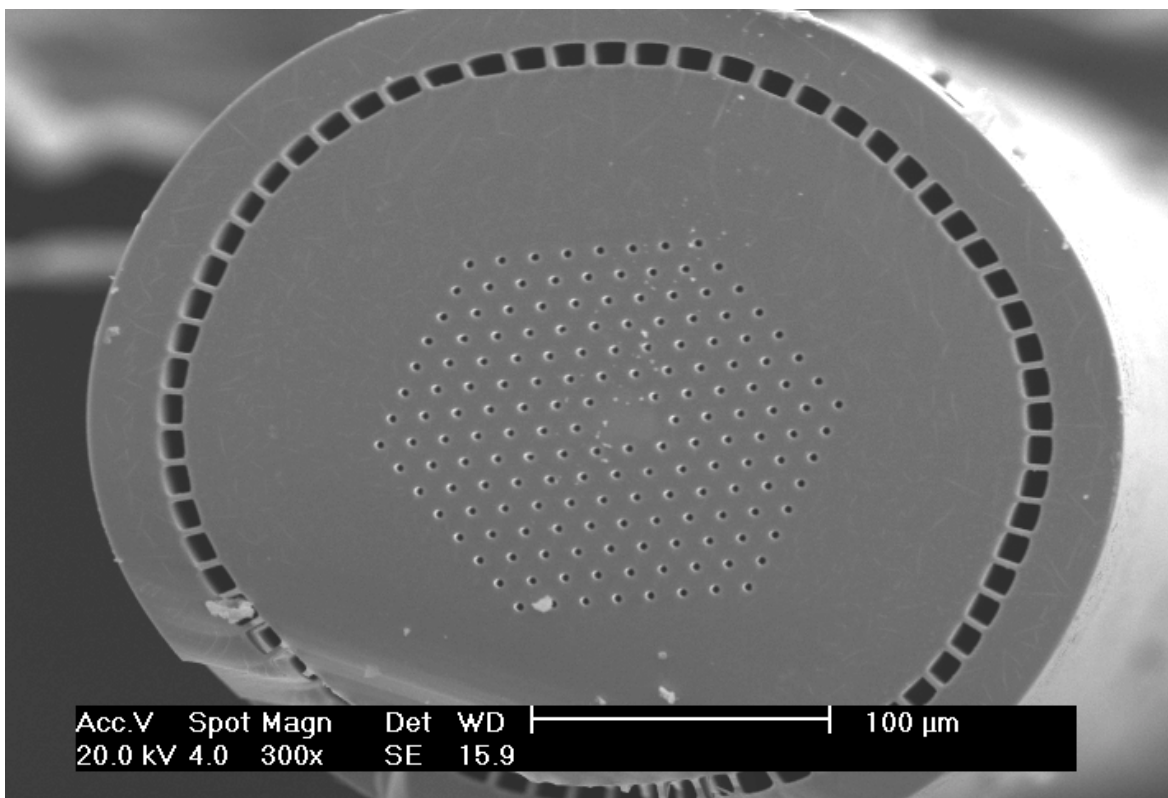


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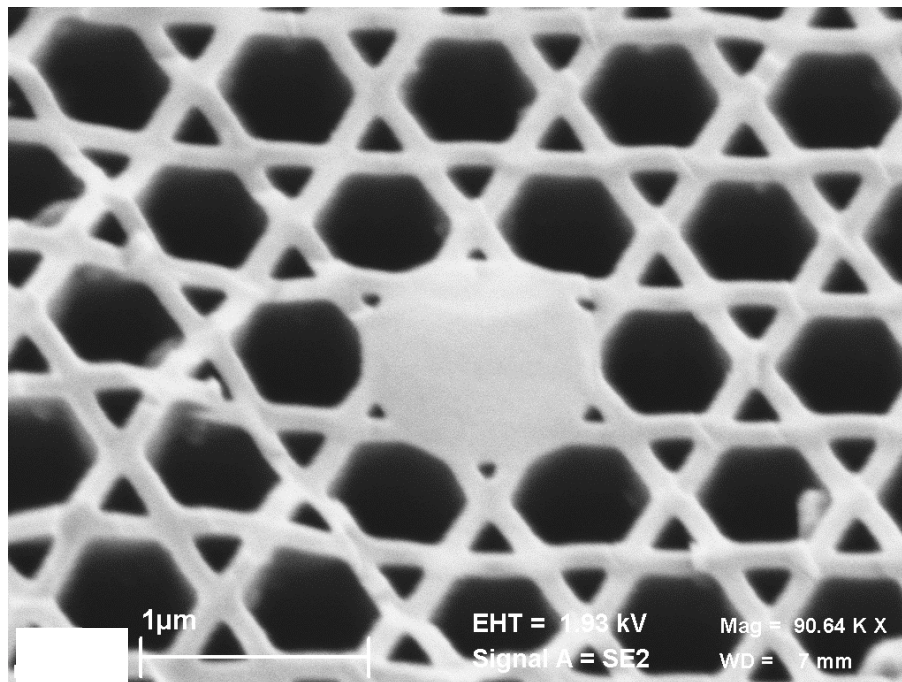


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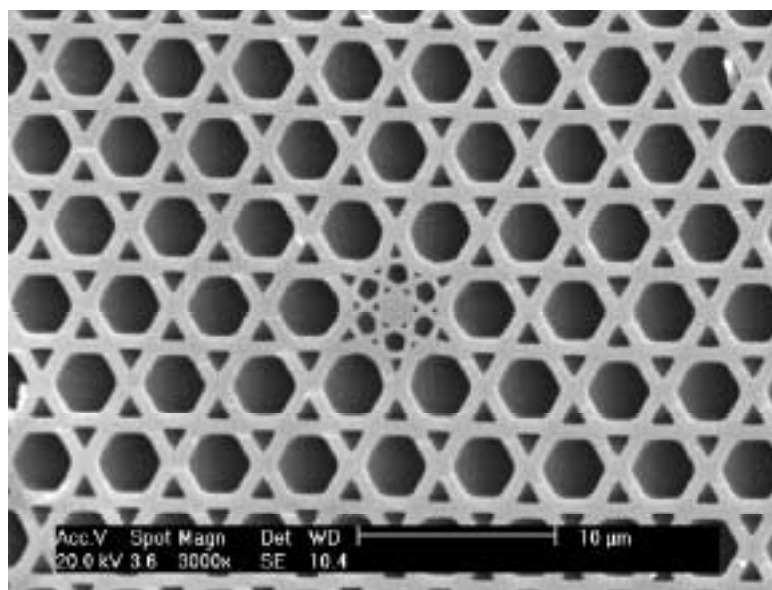


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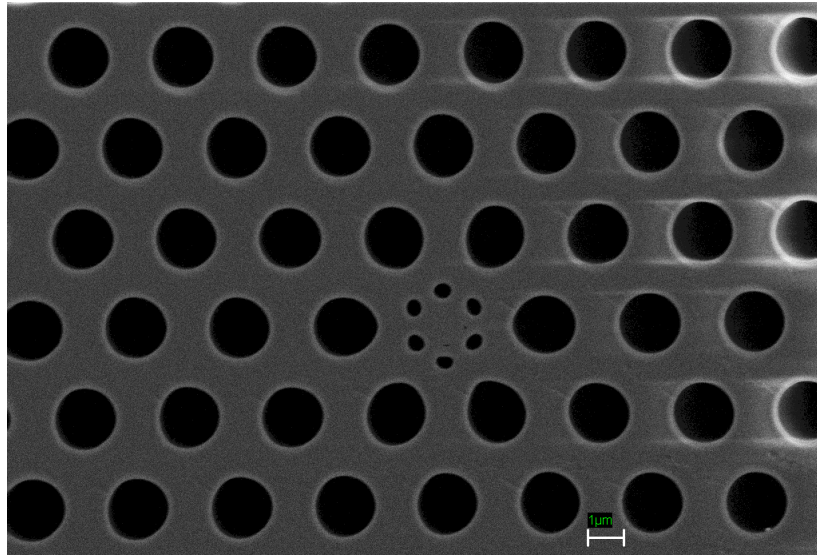


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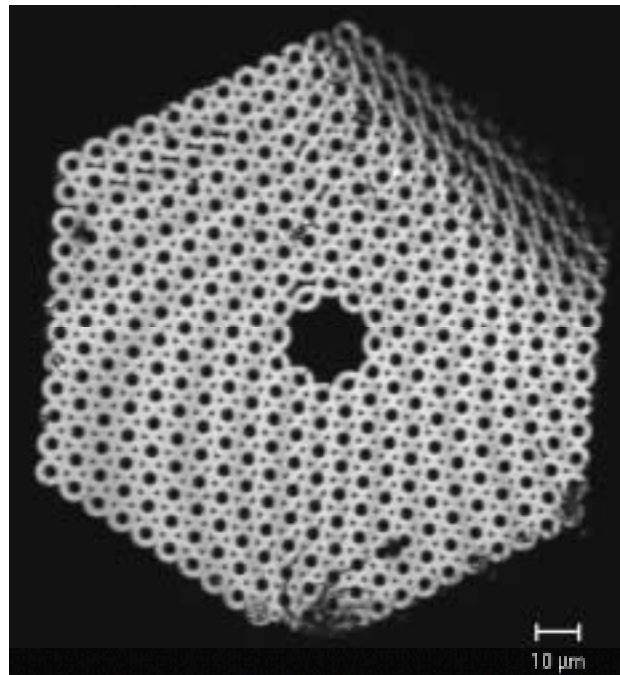


Fig. 1 (i)



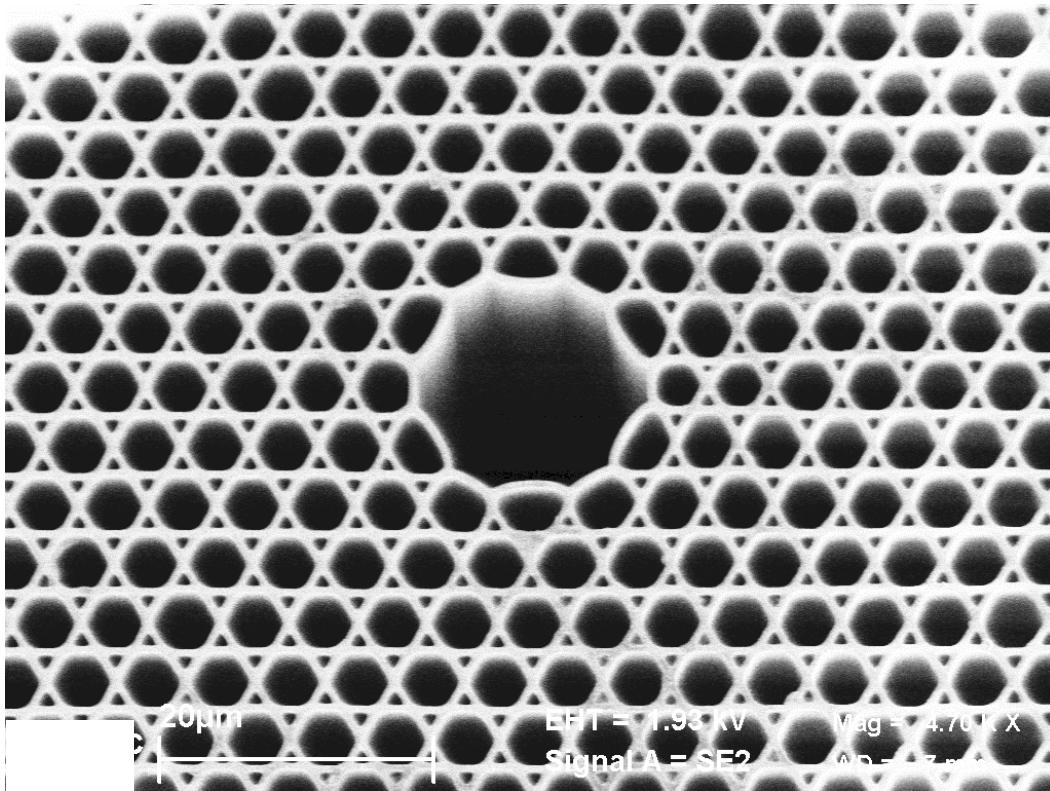


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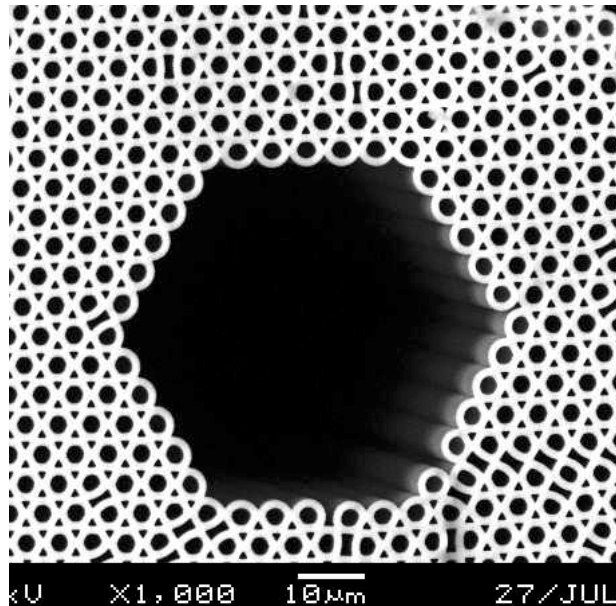


Fig. 1 (k)





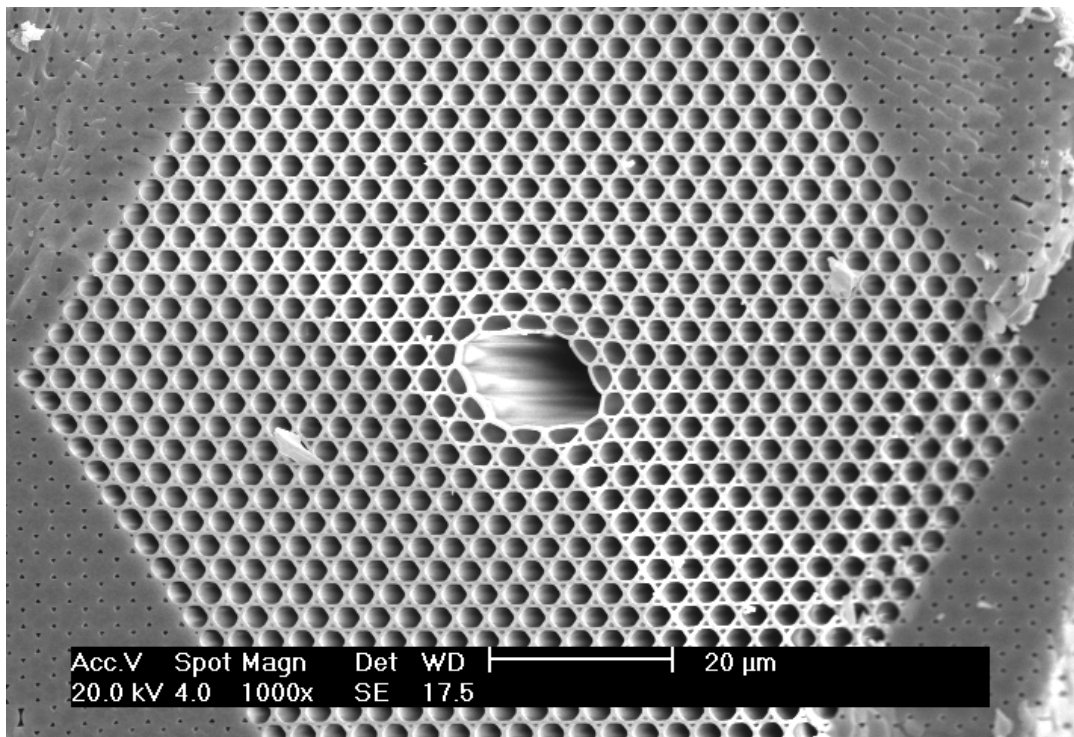


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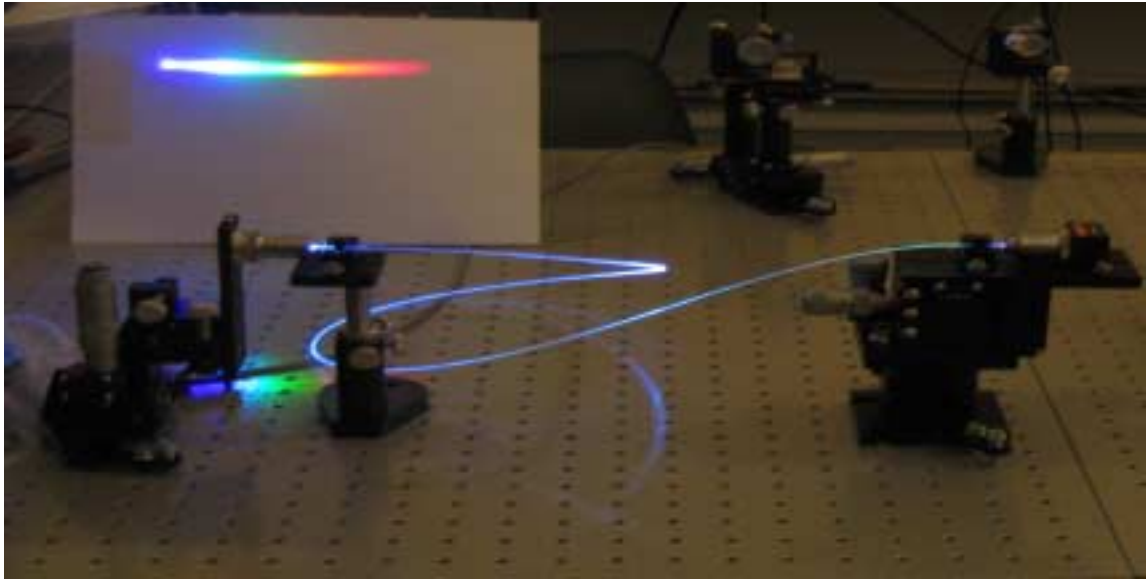


Fig. 2 (a)

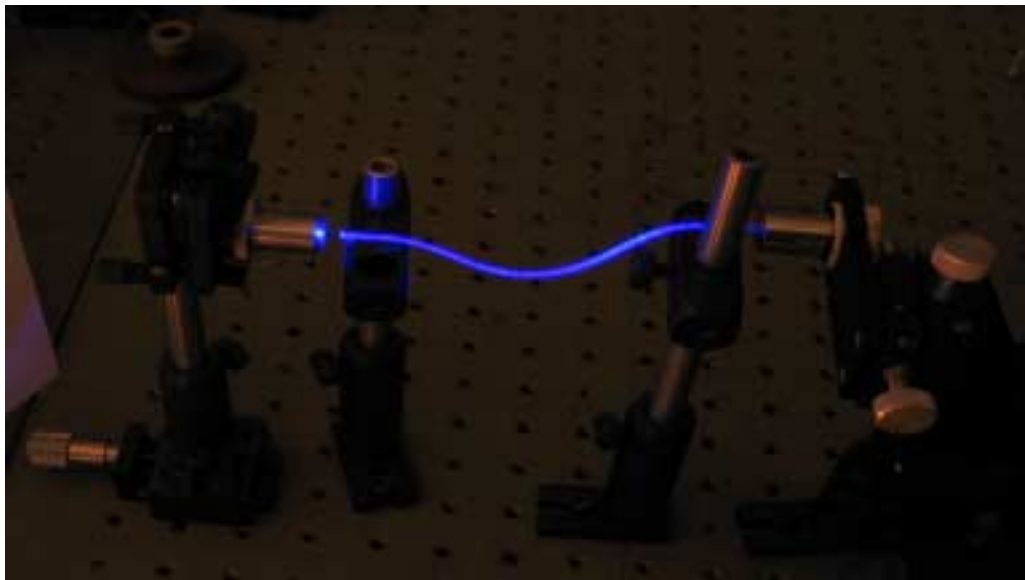


Fig. 2 (b)





Fig. 2 (c)

